Military Surveillance

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Abstract

Military surveillance offers a crucial entry point into the study of surveillance. Historically, the importance of military organizations in state formation meant that many techniques of surveillance that would later migrate into the civilian sphere would bear the imprint of military origins. Moreover, military campaigns were instrumental in developing forms of discipline, communication and surveillance that were to have far-reaching implications for whole societies. Thus, both technologically and organizationally, military models and innovations informed new forms of social, commercial and industrial organization that mobilized principles of surveillance, coordination and control. More recently, scholars have argued that since the post Cold War era societies of the Global North have entered a state of perpetual war preparedness. Moreover, the post-war consolidation of a military-industrial complex in the US has stimulated a multitude of technological innovations with surveillance application. In recent times, technological advancement propelled by military surveillance fantasies have envisaged digitized battle and 'virtuous war' where casualties are eliminated and hostile forces rapidly subdued through superior command of information and high-tech weaponry. The blending and blurring of such fantasies through entertainment and media networks and into domestic policing domains has raised considerable concern about the dehumanizing consequences of remote killing, and the social implications of the militarization of everyday life.

Introduction

While numerous authors have indicated the foundational importance of military surveillance it remains an area that has to date received only scant attention from surveillance scholars. Nevertheless, military surveillance has had a major impact upon the development of surveillance practices. As David Lyon has noted, while military surveillance may be only one of many important starting points in the study of surveillance, it remains a 'singularly important one' and one that offers 'a convenient and salient starting point for surveillance studies' (Lyon 1994, p. 27). The monitoring of soldiers and training such as drill were intended to produce 'machine-like' armed forces that were highly disciplined and controlled. As Dandeker (1990; 2006) suggests, techniques of discipline and control originating in the armed forces subsequently migrated to bureaucratic administration in civilian spheres. Mobilization for war also entailed the advent of surveillance techniques that encompassed whole societies rather than just the military. Personal, health and security checks scrutinizing large segments of the

population in terms of fitness for service informed large scale identification schemes later mobilized by welfare states in the post-war period.

The quest for information and intelligence to provide strategic advantage has also provided a catalyst for the development of surveillance technologies ranging from the utilization of aerial balloon reconnaissance in the nineteenth century through to the development of radar and signal interception, global positioning systems, thermal sensors, unmanned aerial vehicles and satellites. Reliance on information technologies for warfare has been a defining feature of the Revolution in Military Affairs (RAM) that applies informational systems of control to military engagement. Theorists such as Paul Virilio have also argued that post-industrial societies have moved into a state of perpetual war preparedness, whereby the agenda of politics and science is channelled into military goals. In such a scenario new surveillance technologies are continually developed and trialled in an ongoing simulation of war. The transference of technologies and techniques of surveillance developed for military objectives, particularly subsequent to the 'War on Terror', to the civilian sector continues apace, and is evident in police work, border control, the labour market, medical and legal institutions and in terms of entertainment and communications. Nevertheless, the relationship between military and civilian surveillance remains dialectical, with civilian innovations increasingly being investigated for potential military application.

Soldiers, Discipline & Surveillance

By the end of the seventeenth century, European states had accumulated sufficient control over their territorial resources to maintain standing armies that could engage in prolonged campaigns. Dandeker (1990, 69) suggests that this laid the material basis for the development of the modern state as a 'surveillance machine'. An important series of reforms is thus associated with Maurice of Nassau, who from 1585 until his death in 1625 was Captain-General of Holland and Zeeland. Prince Maurice faced the problem of fighting the Spaniards in the Low Countries, and looked to Roman precedents for military models. An important innovation initiated by Maurice was the introduction of systematic military drill for soldiers. While armies had always needed to train recruits, previous assumptions had been that once soldiers were trained to use their weapons, the task of the drill master was complete. Nassau analysed the complex actions required to load and fire matchlock guns, divided them into a series of forty-two separate moves, each accompanied by a name and a specific command. Soldiers could then be taught to make each move in unison responding to shouted orders. Moreover, military drill was to be conducted day-in and day-out, fashioning the individual solider into a kind of automaton responsive to orders and commands, and acting in a rationally calculable manner.

Surveillance and control were also intrinsic to new forms of military organization. A crucial development in this was advent of smaller sub-units trained to co-operate in more complex patterns of organization, as opposed to the more rudimentary organization of pike squares with protective sections of muskets. Battalions of 550 were further divided into companies and platoons whereby a single voice could control the movements of all soldiers. The division of soldiers into smaller units and the practice of drill rendered individual soldiers increasingly visible to their superiors, a visibility heightened by military uniforms and insignia allowing battlefield commanders to distinguish regiments and ranks at a glance. However, gunpowder rendered such personal observation of battles problematic. Furthermore, by the First World War the deployment of the breech loading rifle and machine gun meant bright colourful formations of neatly ordered soldiers were suicidal, giving rise to attempts to conceal visibility through camouflage (Kern 1983, 302-303).

The spatial layout of military encampments was also to have significant influence on surveillance architectures. Foucault argued that the military camp served as a model for the panoptic society. In the military camp, tents and huts were spatially distributed to replicate the hierarchical authority and supervisory structure of the army. Officers' tents oversaw the main gate and the arms depot while captains' tents overlooked rows of company tents. The military camp was, according to Foucault, 'the diagram of power that acts by means of general visibility' (Foucault 1977, 171). The spatial construction of the temporary military camp formed a template for other constructions that would utilize its supervisory potential in other spheres – all manner of buildings from asylums, prisons, factories, schools, housing estates and even shopping malls (Foucault 1977, 171; Lyon 1994, 27).

Production, Security and Total War

If the architectural template of the military camp diffused throughout broader society through a range of institutions, so did innovations in manufacturing that had military origins. The micro-movements and corporeal discipline inherent in the practice of drill invented by Nassau were important precursors of industrial discipline. In the late eighteenth and early nineteenth centuries, French and American armouries began to produce military equipment with fully standardized components. The demand for the interchangeability of parts led to more systematic means of monitoring compliance with uniform routines and a more systematic means of recording deviations. In addition, individual aspects of the manufacturing process were to be broken down and deskilled, with the result that identical movements could be performed ceaselessly by a multitude of workers. In America such innovations were transferred to the civilian sector as contracts for arms production were granted to outside firms, on the basis of their degree of conformity with the uniform system of production. By the late 1850s basic components of this system of manufacture were evident in the production of a various products ranging from pocket watches and sewing machines to typewriters and bicycles. Although the link to Taylorism and techniques of 'scientific management' in industrial manufacturing and military discipline has been disputed (see Dandeker 1990) the synergy between military drill and industrial discipline is evident.

Military requirements were also crucial in fundamentally extending the surveillance capacities of modern nation states. If military organization and training diffused surveillance techniques throughout society, so too did war time mobilization. The extension of the surveillance power of the state for military objectives was perhaps first evident in the compulsory military service of the French Revolution in the late eighteenth century, which required the marshalling of a vast bureaucratic machinery to mobilize the population as a resource of war. Along with the novel idea that everyone owed military service to the nation-state in time of war, this heralded the extension of the surveillance capacities of states most evident in the conflicts of the twentieth century. Many European states began to calculate military potential in terms of population size, a perspective which required assembling an intimate knowledge of the size and distribution of their citizens. Conscription was thus closely intertwined with systems of taxation and national census taking. From the mid to late nineteenth century most European states introduced some form of conscription, and attendant with this was the registration of citizens. While Britain and the USA did not maintain conscript armies prior to the First World War, such a situation did not extend beyond the conflict. In Britain the 1915 National Registration Act authorised the creation of a register of all men and women aged 15 to 65 who were not members of the armed forces or who were resident in certain institutions. The General Register Office (GRO) oversaw military recruitment data gathering, which was linked with data on potential munitions, mining, railway and agricultural workers to contribute to the war economy (Higgs 2004).

If war offered opportunities to develop the surveillance apparatus of the state to monitor its people, it also permitted distinctions to be drawn between those categorized as loyal citizens and those suspected of being hostile aliens intent on forming a fifth column. In Britain the GRO maintained a Central Register of War Refugees in part to monitor those who were it was suspected might side with the German Army should they invade. The GRO supplied information to MI5 on enemy aliens throughout the period. Following wartime, although internal registration was suspended, the control of movement from other states was intensified. In Britain the first passports were issued in 1915, following the 1914 Status of Aliens Act. Wartime restrictions were extended with the passing of the 1920 Aliens Order which stipulated that anyone wanting to leave or enter the country had to carry a passport indicating their nationality and identity. Similar surveillance of 'enemy aliens' was undertaken in the US. In Britain such registration schemes were revived in 1939. The priorities of 'total war' thus involved two crucial developments in state surveillance – the development of the international passport system and mass registration systems within nation-states that would continue to inform subsequent identity schemes.

Speed, Calculation and Science

From the time of Maurice of Nassau many tactical innovations in military organization had been founded to enhance the precision and speed of military manoeuvres. The speed of war increased dramatically in the mid-nineteenth century, in no small part due to the railways and the electric telegraph. Railways had a dramatic impact on the speed and logistics of war, increasing the size of armies and facilitating their movement and control. They increased the speed of war, with military power increasingly defined in terms of mobilization times, and leading to attempts to accelerate mobilization in the second half of the nineteenth century. The emergent war machine dependent on railways was also dependent upon the electric telegraph. Appearing in the 1840s the electric telegraph was particularly useful for co-ordinating movements of men and materials through the rail system and in connecting HQ with units in the field (Dandeker 1990, 86).

If military surveillance has to some extent been driven by the pragmatics of disciplining, coordinating and mobilizing arms and soldiers with maximum tempo, it has also been fuelled by enduring dreams of attaining a cosmic vision with the capacity to render enemy territories calculable and knowable. In the 5th Century B.C. Sun Tzu noted that the key to rapid military victory was foreknowledge (Bogard 1996: 85). Although initially used for scientific investigations into topography and weather, balloons were engaged in military surveillance operations from the eighteenth century. The armies of Napoleon used balloons in 1797 at the siege of Mantua and other armies soon followed this lead. Balloons were used for aerial reconnaissance during the American Civil War and the Franco-Prussian War of 1870-71. At this time the production of interpretable images relied on the human eye and a sketch pad (De Landa 1991, 195). Aerial reconnaissance assumed greater significance in World War 1 when it was combined with photography, not only to produce short-term tactical information before an artillery attack, but also to gather long-term strategic information about enemy intentions and movements. During World War Two developments in aerial surveillance continued apace, with the creation of high resolution colour film and lenses that compensated for air temperature and atmospheric pressure. The quest for commanding God-like vision of territory has continued to fuel technological advancements in aeronautics and space technology from U2 spy planes to satellites.

By World War Two a defining feature of military surveillance was also the incorporation of science and the accelerated pace of weapons development. While scientific advice had been sought previously, military leaders increasingly believed the deployment of a new secret weapon might decisively tip the balance of fighting. As a result, scientists, technologists, design engineers and efficiency experts were drafted into the task of refining existing weaponry and inventing new weapons on a scale hitherto unseen (McNeill 1983, 357). One significant innovation in surveillance technology emerging from the Second World War was radar, where British scientists and engineers discovered how to use short radio waves to locate aircraft at distances sufficient to allow their interception by fighter pilots during the Battle of Britain. Radar technology continued to advance, rapidly finding new uses in gun laying and navigation. Also emerging from World War Two was the concept of a complete weapons system in which each constituent part fitted seamlessly with others. Standardized package sizes consequently to fit standardized cargo spaces in railway cars, airplanes and trucks. This was a process that transferred the techniques of business corporations to the industrialization of war, with the effect of reducing costs and increasing output. As the historian William McNeill suggests 'war, in short, became well and truly industrialized as industry became no less well and truly militarized' (1983: 358-359). In the post-war period, a grouping of military strategies known as C3I (command, control, communications and information) would also transfer to organizational, marketing and consumer contexts, illustrating the continuing interchange between commercial and military strategy (Graham 2010: 64).

Technophilia and Militarization

The significance of surveillance technology in warfare has accelerated considerably in the past half century. Since the Cold War, the US military particularly has been searching for more flexible structures to meet uncertain crises that are difficult to predict in advance. In the period following the Second World War, politicians and military strategists recognized that any future wars would be fought with the weapons and troops available at the outbreak of hostilities. As the time it would take to transform a peace economy onto a war footing was simply too long, Americans decided to place the nation in a constant state of military preparedness (Haggerty 2006: 252). This military preparedness included a harnessing of scientific expertise directed towards military goals. In the post-war period a multitude of technologies now familiar in daily civilian life were initially developed for military application, including microwaves, closed-circuit TV, satellite surveillance, wireless communications, remote control, virtual reality, data-mining and the Internet (Graham 2010: 65). Thus a significant military-industrial-complex has emerged shaped by military priorities.

This unremitting condition of military preparedness has been accompanied by the so-called 'Revolution in Military Affairs' (RMA). The subject of considerable debate amongst US military theorists and commanders, the RMA considers how new technologies of surveillance, communications and 'stealth' or 'precision' targeting through 'smart' weapons can be harnessed to sustain global US military dominance based on 'network-centric' warfare (Graham 2010: 28). RMA theorists also conceive of US military operations as colossal network enterprises, drawing on the flexible organizational structures and processes of the civilian business sector. As Stephen Graham has noted, RMA was envisaged as 'a "just-in-time" system of post human, cyborganized warriors that utilize many of the principles of logistics chain management and new-technology based tracking that are so dominant within contemporary management models' (Graham 2006: 250). The rhetoric of RMA is riven with technophilic fantasies on a global scale of informational and digital interactions that provide real-time situational awareness to usher in 'full spectrum dominance'. This is what Haggerty terms 'information war' by which information

achieves prominence of place as a tactical and strategic resource. Also contained within the vision of RMA is the idea of war without casualties (at least for aggressors) in which superior information, communications and technological artefacts, often with remote capabilities, render the battlespace calculable and amenable to precision calculated targeting. Such technological fetishism also has its origins in the collapse of the Soviet Union, and the subsequent uncertainties about the dimension and character of future conflicts.

Surveillance technologies have long been mobilized in warfare. As already detailed in this chapter, aerial reconnaissance, radar, computing and railways all had military origins pre-dating the Cold War. Nevertheless, the second half of the twentieth century witnessed the vigorous advance of visualizing technologies. For the US military, Vietnam – a war Gray (1997) terms the first 'postmodern war' – became a laboratory for testing a plethora of surveillance devices. The list of devices includes reconnaissance aircraft, communication devices and an elaborate reporting structure alongside more curious excursions such as helicopter mounted 'people sniffers' to detect ammonia left by human urine and sensors fashioned like twigs, plants and animal droppings dotted along the Ho Chi Minh trail to identify vehicle noise and body heat (Haggerty 2006, 254).

In contemporary warfare the immense range of surveillance equipment deployed has transformed the battlefield into a surveillant assemblage of visualization technologies. The coordination of technology, communication and command is thus intended to create a totally transparent battlespace spread across air, land, sea and space. Some sense of what Haggerty describes as 'a military cartographic frenzy' (2006: 255) is provided by moving vertically from the subterranean mapping of caves, bunkers, pipelines and cables through to military satellites circling the globe providing continuous surveillance from the stratosphere. On the ground interactive maps informed by geographical positioning systems facilitate precise situational awareness. Military vehicles and weapons systems are equipped with night vision and video facilities that facilitate combat being monitored in real time and for the remote guidance of munitions. Sensors, monitoring and constant surveillance also generate vast fields of data to be analysed commanders and analysts, often situated in locations far distant from the cross-hairs of action. In the airspace above helicopters, aircraft and unmanned drones instantaneously feed yet more visual and statistical data into the dispersed grid of information through radar, night vision equipment, video and reconnaissance cameras, while spy planes intercept radar, telephone and microwave communications (Haggerty 2006: 255).

Within such scenarios rests the imagined vision of RMA as a seamless information web rendering battlespaces transparent while providing maximum strategic advantage through data flows. The immense importance placed upon informational superiority is intended to operate as a synchronized assemblage, allowing the coordination of all actors within a network who can gain access to a common picture. The promise of surveillance imaging technologies is therefore that they will lift the 'fog of war' providing precise and instantaneous visual and statistical data that finely calibrates the movements of the enemy and facilitates the control, coordination and dispatch of a formidable array of high tech precision weaponry. This advanced informatization of warfare has been envisaged as offering 'full dimension protection' – enabling the avoidance of close combat and minimalising operational risk through overpowering adversaries in the field via superior speed and the application of superior firepower from a distance (Dandeker 2006: 231).

The technological blanket of surveillance technologies across the field of battle has accelerated the pace of combat to an unprecedented level. Nevertheless, while such technology may reduce the fog of war it cannot completely erase it. One possible unintended consequence of this is that the increased speed of data flows strains human fallibility, causing an increase in incidents of friendly and 'blue on blue' incidents, such as have been witnessed in recent conflicts in Iraq and Afghanistan (Dandeker 2006). Moreover the complexity of such systems, and the sheer volume of visual and statistical data generated, can inspire information overload that incapacitates and even retards action rather than accelerating it. This was particularly evident in Vietnam, where the sheer volume of information spawned precipitated a form of command paralysis. In the Gulf War also, satellite systems produced such enormous volumes of data that information systems were overwhelmed (Haggerty 2006: 258).Furthermore, the sheer extent of data available in remote as well as proximate locations led to the micromanagement of battles from afar. With such remote command and control, field officers may prove reluctant to make immediate decisions without the approval of commanders located in distant control rooms.

The military techno-fantasy of RMA has also been undermined by growing cognizance of its blindness to specific geographical contexts. Consequently a growing strand of US military thought now envisages future wars as asymmetrical conflicts fought within the three-dimensional complexity of the urban centres of the Global South. Such urban centres are argued to be great levellers between the high-tech surveillance and communications systems of US forces and low-tech and often informally and poorly equipped adversaries on the ground. The physical structure of such environments – with dead spots, noise and signal absorption and the limited efficacy of GPS in urban contexts – are considered to nullify the previously much vaunted strategic advantage of technoscience wielded by the US military (Graham 2006). As Stephen Graham has documented (2006; 2010) this has inspired a new raft of innovation aimed at rendering complex three-dimensional cityscapes transparent through surveillance technology. An example of such a project is entitled 'Combat Zones that See' (CTS). Initiated by the US Defence Advanced Research Agency (DARPA) at the commencement of the Iraq insurgency in 2003, the project envisages Global South cities with total CCTV with motion pattern analysis capacity and linked to the tracking of whole populations through number plate recognition and facial recognition technology. Urban contexts are configured as yet more intelligent via the ubiquitous positioning of micro-scale and nano-scale sensors. In the military dream, as Graham notes, such military surveillance systems are disturbingly coupled with robotic automated weapons controlled at a distance to instigate what he chillingly describes as 'potentially endless streams of state killing' (2006, 256).

While such visions of an automated surveillance-military killing machine may appear fanciful, such schemes have nevertheless attracted considerable research and development finance. Additionally, the long standing tendency of military technologies to migrate into civilian application should alert us to the possibility of such technophiliac dreams taking root in domestic contexts. In the 1990s the end of the Cold War stimulated questioning of the US military's vast technoscience infrastructure. In 1994 the US Attorney General and the Deputy Assistant Secretary for Defence signed a memorandum of understanding on 'operations other than war' in which they agreed to the development of advanced technologies and systems that be used for both law enforcement and military application. This idea of 'dual use' technologies was particularly influential in the development of 'sub-lethal' weapons (Haggerty and Ericson, 2001). It is also evident in the utilization of Unmanned Aerial Vehicles (UAV), developed in military contexts and now increasingly deployed in policing contexts such as drug law enforcement, border control and even traffic policing.

The importance of the drift of military technologies into domestic application is of considerable importance given the oft noted convergence of internal and external security, a process markedly accelerated since the 'War on Terror'. This indicates some of the complexities of examining contemporary military surveillance exclusively in terms of the armed military forces of nation-states. Traditional Westphalian notions of the modern liberal state envisaged a military power projected out at external enemies in times of war, and an internal policing apparatus mobilizing criminal law to maintain social order internally. However in contemporary times such neat distinctions – external and internal, police and military – have become increasingly blurred. Some scholars suggest that policing, civil enforcement and security services are merging into a continuum of security forces that function both within and without national boundaries (Graham 2010). Moreover, a raft of 'wars' against such diverse threats drugs, crime, terror, biological contagion and illegal immigration, indicate new and dispersed forms of warfare that meld with the fabric of civilian life. In waging these various wars, a militarised surveillance and security infrastructure is increasingly focused both within and without national borders. These new open-ended wars intersect with the writings of contemporary military strategists who have coined such terms as 'irregular war' and 'fourth generation war' to describe envisaged future conflicts, comprised of de-territorialized threats that can be either supranational or domestic, and which dissolve traditional battlefield distinctions between soldiers and civilians. Visions of contemporary conflict as open-ended, de-territorialized and waged against an enemy diffused within the civilian population have been powerful in stimulating a security economy internally – one that militarizes domestic spaces through surveillance techniques and hardware.

The dictates of information war and the proliferation of visual surveillance technologies across battlespace have also had synoptic implications, with the field of combat being rendered more transparent than ever before. While the accelerated mediatisation of conflict has caused military authorities to carefully control images in order to remain 'on message', the proliferation of civilian devices such as camcorders, mobile phone cameras and digital cameras within combat zones can destabilize the stage management of conflicts. Images of Abu Ghraib prison in Baghdad, and private soldiers engaged by the Blackwater Corporation firing on civilians, exposed that war in Iraq was not the bloodless exercise in precision that the military public relations machine intended to project. Despite such countersurveillant intrusions into virtual space, the mediatisation of military operations has overwhelming functioned to showcase high-tech weaponry and a form 'wartainment' whereby the brutal realities of death are distanced and erased. Since the Gulf War of 1990, with its spectacular images of precision guided weapons, war has increasingly been enacted as a vast media spectacle channelled through the circuits of commercial media. This was again evident in Iraq in 2003 where the campaign of 'shock and awe' also functioned as showcase of US high-tech weaponry broadcast through the circuits of civilian media (Graham 2010).

Conclusion

It is fitting in conclusion to revisit some of the key themes outlined here. Underpinning developments in military surveillance from the time of Maurice of Nassau have been fantasies of military power embedded in notions of temporal and spatial mastery. Developments in military surveillance have persistently accelerated the tempo of combat, while generating increasing reams of data aimed at making battle calculable and predictable. On a purely technical level, the demand for control of time and space in military operations has migrated into civilian spheres, with a multitude of innovations from containerization to Global

Positioning Systems redeployed for civilian application. Moreover militaries continue to scrutinize civilian innovations in communications and surveillance for potential military application. For some theorists, there is far more at stake in military surveillance. Drawing on the work of Virilio, Bogard argues that a perpetual state of war preparedness has evolved, evidenced through incessant gaming, mock ups and simulations and the migration of military technology into the civilian sphere. These, he argues, indicate a general militarization of society whereby 'the more blurred the conventional distinctions between peacetime and wartime, civilian and soldier, enemy and friend become' (Bogard 1996: 96). Der Derian (2001) also indicates the melding of entertainment, military and technology into what he terms the 'military-industrial-media-entertainment network' that promotes a concept of 'virtuous war'. The 'virtuous war', capable of actualizing violence at a distance with no or minimal casualties, is represented through real-time surveillance and instant media communications as 'bloodless, humanitarian and hygienic' (2001: xv).

The implications of these developments should continue to be interrogated by surveillance scholars. As Graham has noted, one consequence of the mediatised sanitation of conflict has been the construction of Global South cities, and their inhabitants, as 'little more than receiving points for US military technoscience and ordnance' (2006: 265). Thus simulated and mediated surveillance images of conflict efface the significant body count of contemporary conflict, while rendering the victims of such technology and information barrages as little more than 'bare life'. Moreover the blurring of border control, policing and military power may well mean that military fantasies of techno-control are destined to re-emerge in domestic settings with ever greater rapidity, and may increasingly emerge from within these settings.

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